

Notice of Allowability

Application No.

09/823,500

Applicant(s)

MCDONALD ET AL.

Examiner

YOUNG T. TSE

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11 May 2005.
2. ☒ The allowed claim(s) is/are 24-54.
3. ☒ The drawings filed on 30 March 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 11262004, 01272005
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Allen LeRoy Limberg on July 20, 2005.

The application has been amended as follows:

In line 1 of claims 24, 27, 29, 46, and 49, "Receiver apparatus" has been changed to "A receiver apparatus".

Claim 24 (line 16) and claim 27 (lines 17-18), "an adaptive set of weighting coefficients" has been changed to "a set of adaptive weighting coefficients".

Claim 24 (line 21), claim 25 (lines 2, 24, 26, and 27-28), claim 26 (lines 2, 18, 20, and 21-22) and claim 28 (lines 24, 26, and 27-28), "said adaptive set of weighting coefficients" has been changed to "said set of adaptive weighting coefficients".

Claim 25 (line 4), claim 26 (line 4), claim 28 (line 4), claim 35 (line 4), claim 39 (line 4), claim 44 (line 29), claim 45 (line 31), claim 48 (line 5) and claim 51 (line 5), "the baseband digital modulating signal" has been changed to "a baseband digital modulating signal".

Claim 25 (lines 15-16), claim 26 (lines 13-14) and claim 28 (lines 19-20), "said set of weighting coefficients" has been changed to "said set of adaptive weighting coefficients".

Claim 26, line 17, "said digital baseband" has been changed to "said digital baseband signal".

Claim 27, lines 21-22, "said adaptive set of weighting coefficients" has been changed to "successive sets of adaptive weighting coefficients".

Claim 27, line 28, "an oversampling rate" has been changed to "said oversampling rate".

Claim 27, line 31, "demodulator and oversampling analog-to-digital conversion circuitry" has been changed to "digital synchrodyne circuitry".

Claim 28, line 2, "weighting coefficients" has been changed to "adaptive weighting coefficients".

In line 2 of claims 30 and 31, "a succession" has been changed to "the succession".

Claim 32, line 2, "a baseband filter" has been changed to "a baseband filter having a kernel of weighting coefficients".

Claim 35, line 24, "the resulting" has been changed to "resulting".

Claim 37 (line 4) and claim 41 (line 4), "coder" has been changed to "decoder".

Claim 43, line 2, "successive portions of each data field" has been changed to "successive portions".

Claim 44 (line 38) and claim 52 (line 6), "the actual" has been changed to "an actual".

Claim 45, lines 41 and 48, "a suppressed-carrier" and "the kernel" has been changed to "the suppressed-carrier" and "a kernel", respectively.

Claim 46 (line 38, both occurrences) and claim 48 (lines 4-5, 10, 19, and 25), "decimation filter" has been changed to "adaptive digital filter".

Claim 48 (lines 11 and 27) and claim 51 (lines 14 and 31), "the kernel" has been changed to "a kernel".

Claim 49, lines 18-19, "said phase-splitter and oversampling analog-to-digital conversion circuitry" has been changed to "said phase-splitter".

Claim 52, lines 7 and 11, "the ideal" and "said said" have been changed to "an ideal" and "said", respectively.

Claim 54, line 2, "steps" has been changed to "the steps".

2. The following is an examiner's statement of reasons for allowance: the prior art fails to show or suggest that a receiver apparatus or method comprising at least an analyzer filter for generating discrete Fourier transforms of successive portions of a digital baseband signal from a demodulator and oversampling analog-to-digital conversion circuitry and a bank of multipliers for multiplying the terms of each discrete Fourier transform of the digital baseband signal, term by term, by respective ones of a set of adaptive weighting coefficients to generate a set of products describing the discrete Fourier transform of an equalizer response to the digital baseband signal. Or first and second adaptive digital filters, each having a respective kernel composed of weighting coefficients that can be adjusted, the first adaptive digital filter connected to receive as its respective input signal a first digital baseband signal supply by a synchrodyning circuitry, the first adaptive digital filter connected to supply a first

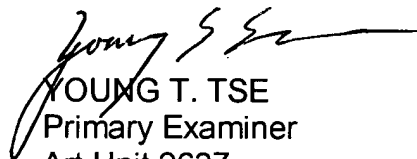
adaptive digital filter response to its respective input signal, the second adaptive digital filter connected to receive the second digital baseband signal supplied by the synchrodyning circuitry, and the second adaptive digital filter connected to supply a second adaptive digital filter response to its respective input signal and a first and second adaptive-filter-kernel computer for computing the weighting coefficients in the kernel of the first and second adaptive digital filters to receive the first and second adaptive digital filter responses and to receive the first and second digital baseband signals supplied by the synchrodyning circuitry.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-30513051. The examiner can normally be reached on Monday-Thursday and alternative Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The Central FAX Number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



YOUNG T. TSE
Primary Examiner
Art Unit 2637